

## FY20 ECR MAIL PROCESSING UNIT COSTS

### I. PREFACE

#### A. Purpose and Content

USPS-FY20-18 develops mail processing unit costs by shape for USPS Marketing Mail Enhanced Carrier Route (ECR) rate categories. It contains electronic documentation of the spreadsheets and programs used to develop these costs.

#### B. Predecessor Documents

The most recent predecessor document was USPS-FY19-18 in Docket No. ACR2019.

#### C. Corresponding Non-Public Document

There is no corresponding non-public document.

#### D. Methodology

The methodology for the calculation of USPS Marketing Mail ECR unit costs is the same as used in Docket No. ACR2019, USPS-FY19-18 (FY2019 ECR Mail Processing Costs), spreadsheet FY19 ECR Unit Costs.xls. The basic methodology originated in Docket No. R2006-1, USPS-LR-L-107.

#### E. Input/Output

USPS-FY20-18 relies upon mail processing cost inputs from USPS-FY20-26; volume inputs from USPS-FY20-14 and USPS-FY20-26; and drop shipment cost avoidances from USPS-FY20-13. It also relies upon the 2020 IOCS data set in USPS-FY20-NP21 and cost distribution and cost pool assignment methodology in USPS-FY20-7.

USPS-FY20-18 outputs are used in the following public folder:

USPS-FY20-3      FY 2020 Discounts and Passthroughs of Workshare Items

### II. ORGANIZATION

The main results are presented in the Microsoft Office Excel workbook 'FY20 ECR Unit Costs.xls' in the spreadsheet 'Results.' This spreadsheet is also reported in Table 1 below. Data sources are referenced in each spreadsheet in

workbook 'FY20 ECR Unit Costs.xls.' The programs and workbooks used to estimate these costs are described in the Program Documentation section below.

<b>Table 1</b> <b>FY20 USPS Marketing Mail ECR Unit Costs</b> <b>(cents per piece)</b>	
ECR Rate Category	Unit Cost (cents)
Basic Letters	42.632
Saturation Letters	2.347
High Density Letters	2.374
Basic Flats	7.872
Basic Parcels	101.445
Total Basic Nonletters	7.872
Saturation Flats	1.332
Saturation Parcels	362.515
Total Saturation Nonletters	1.333
High Density Flats	4.832
High Density Parcels	n/a
Total High Density Nonletters	4.832

### III. PROGRAM DOCUMENTATION

#### A. Computer Hardware and Software

The FORTRAN programs are run on a HP ProLiant DL560 Gen 8 with four Intel Xeon E5-4650 (each with 8 cores @ 2.70GHz) microprocessors and 256 GB of RAM. The operating system on this computer is Red Hat Enterprise Linux Server release 7.9 (Maipo) with the kernel 3.10.0-1160.6.1.el7.x86\_64. FORTRAN programs are compiled using GFORTRAN from GNU Compiler Collection (GCC) version 4.8.5, which can be downloaded from <http://gcc.gnu.org/fortran> . The manual processing spreadsheet work is performed on PCs running the Windows 10 (64-bit) operating system and using Microsoft Office Excel 2002 (64-bit) from Microsoft Office 365 (64-bit).

USPS-FY20-18 includes electronic versions of all relevant programs, maps, and data files. The compiler used to run the PC-based FORTRAN programs can be

downloaded freely from <http://gcc.gnu.org/wiki/GFortranBinaries>. Download the Windows 64-bit version of GFORTRAN. To compile use the command line: x86\_64-pc-mingw32-gfortran.exe -O2 -ffixed-line-length-132 -finit-local-zero -fbounds-check -o {executable name} {program name.f}. The PC-based FORTRAN programs should be run in the same order as the programs are described below.

## B. Preparation of the IOCS Data

The following program extracts clerk and mail handler tallies from the 2020 IOCS data set and prepares the tallies for the volume-variable cost distribution for both mail processing and administration/window service costs for clerks and mail handlers as described in USPS-FY20-7.

Program: **cadoc20\_prc.f** – Separates the clerk and mail handler tallies from the entire 2020 IOCS data set, separates the tallies between mail processing and administrative/window service, and assigns a cost pool to each tally using the method described in USPS-FY20-7.

Input: **FY20 IOCS Data** – Text flat file version of the submitted SAS IOCS nonpublic data set (USPS-FY20-NP21)  
**iocs2020\_np.h** – Declaration of IOCS tally fields  
**mods\_fins20.prn** – List of MODS 1&2 finance numbers used to identify MODS 1&2 offices (USPS-FY20-7)  
**mods\_fcn4\_fy20.prn** – Map of function 4 MODS operation codes which are assigned to Non-MODS cost pools  
**costpools20.prn** – Map of mail processing cost pools

Output: **clk\_mh\_mp20.dat** – IOCS mail processing tallies  
**clk\_mh\_aw20.dat** – IOCS administrative and window service tallies

## B. Cost Estimates – Clerks and Mail Handlers, Mail Processing

The following FORTRAN programs replicate the function of the mail processing cost distribution SAS programs documented in USPS-FY20-7. The results of these programs are exported into Microsoft Office Excel where final results are summarized and reported.

Program: **mpproc20\_ecr.f** – Estimates the mail processing volume-variable costs by activity code and cost pool.

Input: **clk\_mh\_mp20.dat** – IOCS mail processing tallies  
**iocs2020\_np.h** – Declaration of IOCS tally fields

**activity20\_ecr.dat** – List of the direct and class specific mixed activity codes

**mixclass.intl** – List of class specific mixed mail activity codes

**mxmail.ecr.dat** – Maps the direct activity codes to their respective class specific mixed mail activity codes

**costpools20\_ld15.prn** – List of mail processing cost pools and cost pool dollars (USPS-FY20-7)

Output: **mp20prc\_ecr.data** – Estimated mail processing volume-variable costs by cost pool and activity code

Program: **sumclass\_ecr.f** – Rolls up the output from mpproc20\_ecr.f from activity code to USPS Marketing Mail ECR rate category by cost pool and shape

Input: **mp20prc\_ecr.data** – Estimated mail processing costs by cost pool and activity code

**costpools20\_ld15.prn** – List of mail processing cost pools

**activity20\_ecr.dat** – List of the direct and class specific mixed activity codes

**classes\_cra20.prn** – List of CRA subclasses

Output: **mp20cra\_ecr.csv** – Estimated volume-variable costs for USPS Marketing Mail ECR mail by cost pool, shape, and ECR rate category

Workbook: **FY20 ECR Mail Proc Costs.xls** – Summarizes estimated mail processing volume-variable costs for USPS Marketing Mail ECR mail by cost pool, rate category, and shape.

Input: **mp20cra\_ecr.csv** – Estimated volume-variable costs for USPS Marketing Mail ECR mail by cost pool, shape, and ECR rate category

**FY20 Mail Processing Volume-Variable Costs** – ECR mail processing costs by shape (USPS-FY20-26)

Workbook: **FY20 ECR Unit Costs.xls** – Development of FY20 ECR mail processing unit costs.

Input: **FY20 ECR Mail Proc Costs.xls**  
**FY20 RPW Volumes** – USPS-FY20-26  
**FY20 RPW Weights** – USPS-FY20-14  
**FY20 Piggyback Factors, Cost Ratios, Volumes, and Reconciliation Factors** – USPS-FY20-26  
**Nontransportation unit cost avoidance per pound per entry point** - USPS-FY20-13